

Full Service, Please

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Hot, dry climates often are responsible for the premature failure of equipment components. If not addressed properly, high heat, dust and sand will hinder your equipment's performance and your efforts in conducting maintenance activities. Fortunately, a little preventive maintenance goes a long way in ensuring your equipment stands up to any hazard the desert offers.

The safe conduct of preventive maintenance checks and services is a combat multiplier that will support the successful accomplishment of your missions. Below you'll find some recommendations based on my experience in maintaining equipment in hot weather. Before getting started on any maintenance activities, however, remember to remove all jewelry, button all sleeves and wear appropriate personal protective equipment.

Filters. The heavy dust and sand conditions experienced in most hot climates can clog engine air filters or v-packs in a hurry. Keeping the sand and dust out of filters and air inlet areas will help the overall performance of a vehicle's engine. Compressed air will help blow the dust out, but ensure Soldiers wear goggles and hearing protection while operating an air compressor.

Engines. Internal combustion engines generate a lot of heat in conditions with high ambient temperatures. Ensuring the vehicle's radiator fins are unobstructed and not smashed or blocking airflow will keep the cooling system operating properly. Most organizational tool rooms have a radiator fin comb that can reshape damaged fins and open the airflow passages. You also should regularly inspect cooling system components such as the surge tank, belts and hoses. Remember, however, never to open the surge tank when the engine coolant is hot. A shower in 200-degree coolant is not the ticket for personal hygiene! Soldiers should wear gloves and eye protection when working around cooling systems.

Lubrication. When performing vehicle maintenance, remember to lube by the lube order. Each vehicle has a lube order that explains lube intervals and the location of lube points. High heat and extended operating hours require operators to reapply grease more often. A clean rag, coveralls and eye protection will ensure you get the job done safely.

Tires. Maintainers must inspect tires during PMCS. Worn tread or sidewall damage can lead to tire failure during a mission. Sidewall damage decreases the structural integrity of the tire and can result in rupture, especially under high heat conditions. Proper tire pressure also is a critical factor in maintaining vehicle stability. In fact, just a 20-percent disparity in tire pressure can mean the difference between a vehicle that's under control or out of control.

Underinflation or overinflation can cause tires to wear unevenly and also results in poor fuel mileage. Tire air pressure should be checked weekly, but remember split-rim or multipiece wheels require special equipment and training. For more information and a link to Occupational Safety and Health Administration charts on how to service these wheels, visit the Tire Industry Association's Web site at <http://www.tireindustry.org/cts.asp>.

Batteries. If neglected, vehicle batteries are very susceptible to heat damage. Hot, arid climates can cause battery electrolyte levels to evaporate quickly. Use only distilled water when refilling a battery's fluid levels. Cleaning and tightening battery holds and applying a



small amount of grease to battery clamps is the best defense to ensure battery life longevity.

Glass. The addition of armor plates reduces visibility from the cab for both the driver and truck commander, so clean and serviceable ballistic glass is a must. When applicable, only clean ballistic glass with mild detergent and warm water. Don't scratch the inner surface or apply stickers or labels to ballistic glass. When cleaning windows, give mirrors and lights a quick wipe as well.

Cooling systems. Most of the Army's wheeled vehicles now have aftermarket air conditioning installed. Inspecting and servicing these systems can help keep crews 10 to 20 degrees cooler during missions. The systems are simple to inspect; tight belts and clean filters are the only operator checks. Compressed air is the best remedy for cleaning dirty filters or blowing out fans. If a system doesn't blow cool air, see the maintenance reps. Remember to keep your hands away from belts and pulleys while the equipment is running and also watch for the condenser fins, which are sharp and can cut skin easily.

Generators. Preventive maintenance isn't for vehicle components only; power generators require the same attention. If your unit has two of the same-type generators, alternate their use with a 12-hours-on, 12-hours-off schedule and PMCS them often. Put generators in the shade whenever possible; the cooling effect might help their performance. Additionally, load the generator at 80 percent to prevent "wet stacking," or a buildup of fuel that can damage the generator's engine.

Don't forget to ground! Achieving a good ground in desert environments can be difficult, but it's critical to preventing shock hazards. In the August 2005 edition of PS, the article "Grounding Right in the Desert" offers several techniques to overcome this issue. Slide hammers are the proper tool for hammering ground rods.

Maintenance activities in extremely hot weather are just around the corner. By following the cautions and warnings in your equipment's technical manuals, using proper personal protective equipment for the mission and employing some common sense, you can prevent needless accidents from affecting you and your fellow Soldiers.

---FYI Planning to perform some preventive maintenance on your vehicle? If so, consult the chart below to see what PPE you should wear for the job.

Activity	Acid-resistant Apron	Work Gloves (hazard dependent)	Goggles	Ballistic Eye Protection	Helmet (Army Combat Helmet or Kevlar)
Battery Maintenance	●	●	●		
Camouflage/Tarp Erection		●			●
Grounding Rods		●		●	●
Compressed Air		●	●		